

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-002485**Date Inspected:** 16-May-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1400**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2300**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Zhang Zhong**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Caltrans OBG**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Ken Jobes, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, to randomly monitor welding and Quality Control (QC) functions. While on site, the QA Inspector observed and/or discovered the following:

**OBG Shop No. 1**

The QA Inspector randomly observed the machine Submerged Arc Welding (SAW) of U-ribs to deck panel 165-001. The Welding Procedure Specification (WPS) being used was WPS-B-T-2342-U1(Urib)-3. This procedure is a combination procedure utilizing Gas Metal Arc Welding (GMAW) for the root pass and SAW for the fill pass. The SAW portion of the WPS was being used in the horizontal groove (2G) welding position to make multiple simultaneous welds (Weld Nos. 1, 2, 5, 6, 9 and 10) using Gantry Welding Station No. 2 in OBG Shop No. 1. Certified Welding Inspector (CWI), Zhang Zhong (CWI No. 07051341) was present during this welding, as was ABF QA/QC Inspector, Man Kit Li. The QA Inspector observed that the ZPMC QC Inspector was recording parameters and reviewed that documentation.

The following welding operators were used to perform this welding:

Zhang Shao Hui (I. D. No. 059403)

Xiang Jie (I. D. No. 059378)

Xiang Huan Feng (I. D. No. 059416)

Song Yinshu (I. D. No. 059421)

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## WELDING INSPECTION REPORT

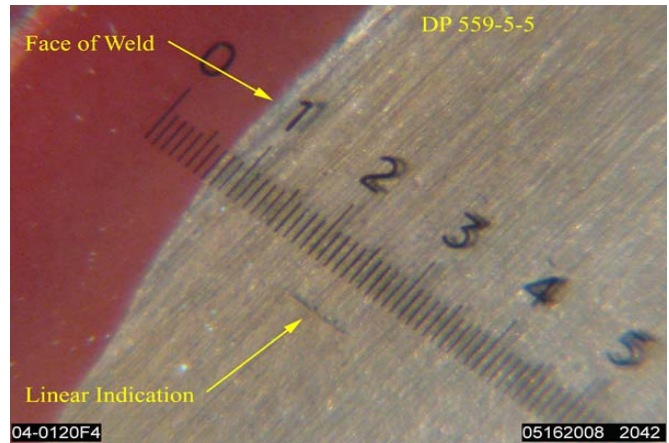
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The qualifications of the welding operators were verified by the QA Inspector looking at their qualification cards. The welding parameters appeared to be within the ranges specified on the WPS.

### Production Monitoring Tests – Macro-Etches

The QA Inspector was assigned to perform a visual examination of one set (15) of Production Monitoring Tests (PMT's). The Macro-Etch samples for U-ribs to deck panels were identified as representing deck panel DP-559-001. The PMT's were welded on 05-16-08. ZPMC QC had accepted and ABF QA had reviewed the samples prior to Caltrans Inspector's visual examination. All samples appeared to contain penetration greater than 80 percent and all but sample No. 559-5-5 appeared to meet the acceptance criteria. Sample No. 559-5-5 did not appear to meet acceptance criteria due to a linear indication near the center of the face of the weld that appeared to be incomplete fusion. All the data from the review was recorded in a tracking log and forwarded to the internal server. The samples were digitally photographed and placed on the internal server for future reference. Below is a photograph of sample 559-5-5.



### Summary of Conversations:

As identified within the contents of this report.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Patrick Lowery (858-344-27120, who represents the Office of Structural Materials for your project.

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**Inspected By:** Jobes, Kenneth

Quality Assurance Inspector

**Reviewed By:** Cochran, Jim

QA Reviewer

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